

REMARKS

Pursuant to the present amendment, claims 4, 9, 16, 17 and 19-22 have been canceled, claims 1, 5, 6 and 12 have been amended, and new claims 23-34 have been added. Thus, claims 1-3, 5-8, 10-15, 18 and 23-34 are pending in the present application. No new matter has been introduced by way of the present amendment. Reconsideration of the present application is respectfully requested in view of the amendments and arguments set forth herein.

As an initial matter, claims 19-22, canceled by the present amendment, are directed to a non-elected invention subject to a previous restriction requirement issued by the Office. Applicants specifically reserve the right to pursue the subject matter defined by claims 19-22 in a later filed application should they so desire.

In the Office Action, dependent claims 9 and 17 were indicated to be allowable if rewritten in independent form to include all intervening limitations. Pursuant to the present amendment, new independent claim 23 and 30 have been added to re-present now-canceled dependent claims 9 and 17, respectively, in independent form. Accordingly, it is believed that new claims 23-34 are in condition for immediate allowance.

In the Office Action, claims 1, 2 and 8 were rejected under 35 U.S.C. § 102 as allegedly being anticipated by Lee (U.S. Patent No. 6,784,051). Claims 3-6 and 12-16 were rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Lee in view of Hara (U.S. Patent No. 6,451,696). Claims 7, 10, 11 and 18 were rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Lee in view of Hara and Hongo (U.S. Patent No. 6,615,854). Applicants respectfully traverse the Examiner's rejections.

Pursuant to the present amendment, independent claims 1 and 12 have been amended to include the limitations from now-canceled dependent claims 4 and 16. Accordingly, it is

believed that the Examiner's anticipation rejections are now moot. However, it should be understood that in making the present amendments, Applicants do not acquiesce in the correctness of the Examiner's anticipation rejection.

As the Examiner well knows, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); M.P.E.P. § 2142. Moreover, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974). If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); M.P.E.P. § 2143.03.

With respect to alleged obviousness, there must be something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561 (Fed. Cir. 1986). In fact, the absence of a suggestion to combine is dispositive in an obviousness determination. *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573 (Fed. Cir. 1997). The mere fact that the prior art can be combined or modified does not make the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990); M.P.E.P. § 2143.01. The consistent criterion for determining obviousness is whether the prior

art would have suggested to one of ordinary skill in the art that the process should be carried out and would have a reasonable likelihood of success, viewed in the light of the prior art. Both the suggestion and the expectation of success must be founded in the prior art, not in the Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991; *In re O'Farrell*, 853 F.2d 894 (Fed. Cir. 1988); M.P.E.P. § 2142.

Applying these legal standards, it is respectfully submitted that independent claim 1 is in condition for immediate allowance. Among other things, independent claim 1 requires that the first etchant is applied to remove material of the metal layer and a second etchant is applied to remove material of at least the barrier layer. It is respectfully submitted that the entirety of claim 1, including this limitation, is not disclosed nor suggested in the prior art of record.

The Examiner concedes that Lee, the primary reference, does not expressly disclose this limitation. However, the Examiner attempts to cure this admitted deficiency from Lee by reference to Hara. Applicants respectfully disagree with the Examiner's reasoning and analysis. It is true that Lee is directed to a process of fabricating a semiconductor device such that a pattern at an edge region of a wafer is prevented from lifting and acting as a source of particle contaminants. Abstract. However, at no point does Lee even remotely suggest using a first etchant to remove the metal layer from above the edge region and thereafter using a second etchant to remove at least the barrier layer from above the edge region of the wafer.

Hara, the Examiner's secondary reference, is believed to be quite far afield from the present invention. As understood by the undersigned, Hara is directed to a method of reclaiming a wafer substrate material for subsequent use by a semiconducting manufacturer. Abstract. To that end, Hara discloses a process involving performing a chemical etching step for removing all metallic films and at least part of the dielectric films above a previously used wafer substrate,

performing a chemical mechanical polishing step to remove the residual dielectric film and performing a finish polishing step for finish-polishing at least one surface of the substrate. Col. 6, ll. 6-25. While Hara does state that various etching processes may be performed simultaneously or sequentially, it is believed that that disclosure does not render the invention defined by amended independent claim 1 obvious.

It is believed that the Examiner's obviousness rejection is flawed in many respects. First, even if Lee and Hara were combined in the manner suggested by the Examiner, the combination of such art would not teach each and every feature of the claimed invention as defined by amended independent claim 1. More specifically, the combination of Lee and Hara do not disclose nor suggest using first and second etchants to remove the metal layer and at least the barrier layer, respectively, from above an edge region of the substrate. Such a disclosure is simply lacking in a combined teaching of both of the references. Accordingly, any obviousness rejection based upon the combination of Lee and Hara is legally improper.

Second, there is simply no suggestion in the art of record to modify the teachings of Lee and Hara so as to arrive at Applicants' claimed invention. A recent Federal Circuit case makes it crystal clear that, in an obviousness situation, the prior art must disclose each and every element of the claimed invention, and that any motivation to combine or modify the prior art must be based upon a suggestion in the prior art. *In re Lee*, 61 U.S.P.Q.2d 143 (Fed. Cir. 2002). Conclusory statements regarding common knowledge and common sense are insufficient to support a finding of obviousness. *Id.* at 1434-35. It is respectfully submitted that any attempt to assert that the invention defined by amended independent claim 1 is obvious in view of the teachings of Lee and Hara is based upon an improper use of hindsight using Applicants'

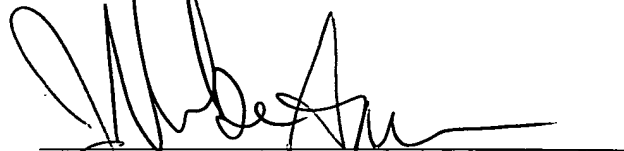
disclosure as a roadmap. Accordingly, it is respectfully submitted that amended independent claim 1, and all claims depending therefrom, are in condition for immediate allowance.

As indicated previously, independent claim 12 has been amended to include the limitations from now-canceled dependent claim 16. As amended, independent claim 12 requires the use of two distinct etchants wherein the second etchant is used to remove unwanted metal from the edge region prior to selectively removing unwanted material with the first etchant. For many of the reasons set forth above, it is respectfully submitted that the invention defined by amended independent claim 12 is likewise in condition for immediate allowance.

In view of the foregoing, it is respectfully submitted that all pending claims are in condition for immediate allowance. The Examiner is invited to contact the undersigned attorney at (713) 934-4055 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "J. Mike Amerson", is written over a horizontal line.

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